

Field Report

J.N. “Ding” Darling National Wildlife Refuge

■ 1.0 Summary

Located on Sanibel Island, near Ft. Myers Florida, the J.N. “Ding” Darling National Wildlife Refuge (NWR) is one of the most visited refuges in the USFWS refuge system (see Figure 1). The “Ding” Darling NWR was established in 1945 and includes several satellite refuges. The refuge is constantly looking for additional ways to educate the public about the wildlife populations that live in or migrate to the refuge, while maintaining its primary goal to preserve and protect the wildlife habitats it manages.

Island residents have a high regard for the beautiful beaches and wildlife whose beauty has attracted so many visitors to the island. The refuge and the island face constant conflict between encouraging visitors to come to Sanibel and preserving the natural beauty of the island. The high level of traffic that the island experiences during the peak visitation season exacerbates the conflict between preserving the area for wildlife and educating visitors on the wildlife and conservation efforts. Although there are some residents who would like to close the island to tourists, it is possible for the island to support more visitors, if they came without their cars.

Over the past few years, the refuge has closed a number of areas to the public due to wildlife disturbance. The three access points on the refuge are Wildlife Drive, the Tarpon Bay Recreation area, and the Bailey Tract located on Tarpon Bay Road. At the Wildlife Drive entrance, visitors are able to experience the new Visitor Environmental Education Center before traveling on the five-mile, one-way drive by car, bicycle or on foot. There is also an optional guided tram tour operated by a contracted concessionaire two times per day during peak season. The tram begins at the Tarpon Bay recreation area and transports visitors to Wildlife Drive for the tour. Although there is no land access to the refuge at the Tarpon Bay recreation area, visitors are able to rent bicycle and canoes at the concession there.

Options to bring Alternative Transportation Systems (ATS) to the “Ding” Darling NWR must take into consideration the surrounding community and the traffic problems faced by the City of Sanibel. The refuge is inextricably linked with the island and must be sensitive to the needs and desires of the residents when solving refuge problems. Feasible ATS for the refuge must look at two systems: one to be used in the refuge, and one to bring people to the refuge from other parts of the island. Any ATS must look at the possibility to keep cars out of the refuge by keeping them off the island.

Concepts for ATS include the possible expansion of the tram system within the park along with the exclusion of private vehicles on Wildlife Drive and the introduction of a shuttle system from parking areas off the island to island activities either by trolley, bus, or ferry.

Figure 1. “Ding” Darling NWR Entrance and Bicycle Path along Sanibel-Captiva Road



■ 2.0 Background Information

2.1 Location

Named after the famed cartoonist-conservationist, J. Norwood “Ding” Darling, the “Ding” Darling NWR is located on Sanibel Island, Florida off the coast of Ft. Myers, Florida. Sanibel Island is part of the Florida barrier islands in the Gulf of Mexico including neighboring islands of Captiva Island and Pine Island. Known for beautiful beaches, exquisite seashells, and marine wildlife, Sanibel Island is a major vacation destination in southern Florida.

2.2 Administration and Classification

The refuge was established in 1945 as the Sanibel NWR and was renamed in 1967. The majority of the refuge is located in the jurisdiction of the City of Sanibel in Lee County, FL. The refuge has management agreements with the State of Florida for two areas in the refuge including the 950-acre Tarpon Bay and 184-acre State Botanical Site.

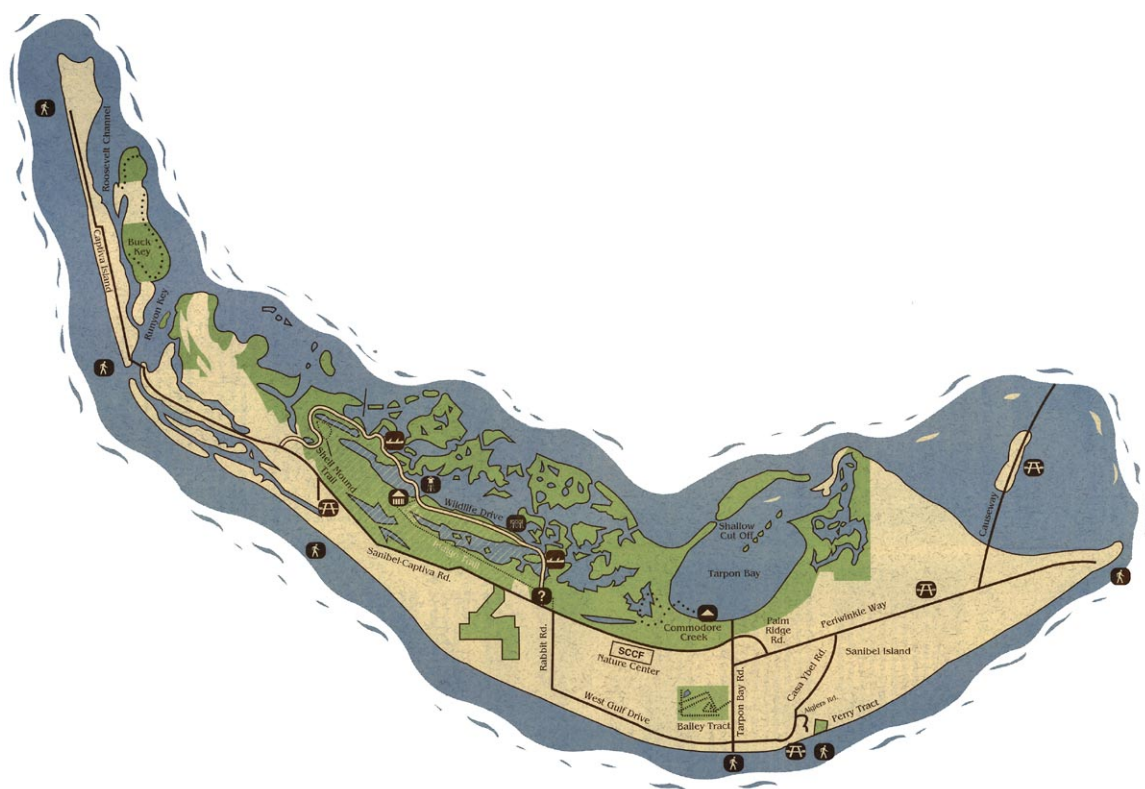
Other refuges administered through the “Ding” Darling NWR include the Pine Island NWR, Island Bay NWR, Matlacha Pass NWR, and Caloosahatchee NWR.

2.3 Physical Description

The refuge covers almost half of Sanibel Island, but is not the only area of the island that is preserved for land and wildlife conservation. The Sanibel-Captiva Conservation Foundation is active in the preservation of other areas of the island including the Sanibel River area.

Although the refuge encompasses over 6,000 acres, almost 3,000 acres are designated as Wilderness Area (see Figure 2). The island is accessible from the county-owned causeway which leads to Sanibel’s main street, Periwinkle Way. Entrance to the Refuge Visitor Center and Wildlife Drive is located off Sanibel-Captiva Road, the main road across the west end of the island. The most accessible area of the refuge is the five-mile, one-way Wildlife Drive. The main entrance is the loading area for the guided tram tour during non-peak season.

Figure 2. Map of J.N. “Ding” Darling NWR



The refuge is also accessible from Tarpon Bay Road. Although there is no Visitor Center at this entrance, canoe and bicycle rental is available through a contracted concessionaire. The Tarpon Bay entrance is also the loading area for the guided tram tour during peak season.

2.4 Mission and Goals of the National Wildlife Refuge

The mission of the refuge is twofold: to preserve wildlife habitats and educate the public about wildlife and wildlife preservation. The goal to provide a visitor experience through education and observation is often in conflict with the goal to preserve habitats for wildlife. The USFWS mission mandates putting wildlife before the visitor. The specific objectives of the “Ding” Darling Refuge are:

- To join in partnership with the residents of Sanibel and Captiva Islands, Lee County and the State of Florida to safeguard and enhance over 7,300 acres (includes federal and state or county areas near refuge) of pristine subtropical habitat for the benefit of wildlife;
- To protect and provide suitable habitat for endangered and threatened species including the American crocodile, west Indian manatee, wood stork, eastern indigo snake and bald eagle;
- To implement sound wildlife management techniques to provide feeding, nesting and roosting habitat for a wide diversity of shore birds, wading birds, waterfowl, raptors and neo-tropical migratory species; and
- To provide high-quality interpretive and environmental education programs in order to develop within each refuge visitor an appreciation of fish and wildlife ecology and to provide quality wildlife-oriented recreation compatible with the purposes for which the refuge was established.

2.5 Visitation Levels and Visitor Profile

The refuge accommodates over 800,000 annual visitors. The refuge visitors are only a fraction of the visitors to Sanibel Island. The peak season of the refuge traditionally starts in December and ends in April. The highest visitations to the island and the refuge occur during Christmas and Easter weeks. During the peak season, the refuge can experience 14,000 visitors per month and 1,200 visitors per day in the Visitor Center. Although portions of the visitors are residents (year-round and part-time), most new visitors have come to Sanibel for the beaches and find the refuge once they arrive on the island.

According to Refuge Management, every 5th grade class in the county visits the refuge and 80 percent of the adult refuge visitors are college educated. Since the institution of two radio recordings (on AM stations), the refuge is able to make contact with approximately 80 percent of the visitors before they arrive at the Visitor Center. The radio recordings offer visit and ecological information and encourage visitors to stop at the Visitor Center. The rangers and volunteers understand that the education of the visitors makes them better visitors.

The most popular way to see the refuge is on the five-mile, one-way Wildlife Drive. Wildlife Drive is accessible by tram, automobile, bicycle and pedestrians. Mopeds and buses are not permitted. The guided tram tour, operated by a concessionaire, is a refuge recommended activity. The refuge provides educational materials to the tram guides, although the guides are independent contractors to the concessionaire. The tram has been well received by both visitors and the refuge. The refuge plans to expand the tram system in the future.

Other activities allowed on the refuge include fresh and salt water fishing, hiking, canoeing, birdwatching, and photography. Canoes and bicycles are available for rent at the Tarpon Bay entrance or through independent operators outside the refuge. The Tarpon Bay concessionaire (see Figure 3) also offers guided canoe and fishing trips, as does specially permitted operators such as Westall Canoe Adventures.

Figure 3. Tarpon Bay Concession



The refuge also grants special use permits for researchers. Camping is not permitted on the refuge. For the benefit of the wildlife and special maintenance, Wildlife Drive is closed on Fridays.

To provide a quality educational experience with justice to the wildlife, the “Ding” Darling Wildlife Society, a non-profit volunteer group, has raised \$2 million for a new Visitor Center. The new Visitor Center opened in October 1999. With the opening of the new Visitor Center and the improvement of educational displays, the typical length of stay is expected to increase from the approximate 20 minutes visitors spend in the current Visitor Center.

■ 3.0 Existing Conditions, Issues and Concerns

The “Ding” Darling NWR and the City of Sanibel are inextricably linked due to their shared location on Sanibel Island. Frequently, although not always, issues and concerns which face the City effect the refuge.

3.1 Transportation Conditions, Issues and Concern

Parking is the major traffic concern of the refuge. The parking lot at the Visitor Center accommodates approximately 40 to 50 vehicles. The parking available at the Tarpon Bay lot doubles the capacity of refuge parking. During peak season, the guided tram tour must operate out of the Tarpon Bay lot due to extreme crowding at the Visitor Center lot. Capacity for parked cars on the refuge has resulted in the refuge’s effort to expand parking lots. Although it is an unpopular decision, the refuge has recently acquired and cleared a small area adjacent to the Visitor Center parking lot for additional parking (see Figure 4). This new lot is masked from view by a ring of trees and other plants which were maintained during the clearing process. The new lot should accommodate approximately 40 cars.

Figure 4. Parking at Visitor Center – Current (Left) and Additional Future (Right)



Wildlife Drive is the main road access through the refuge. The drive is gravel, sand and shell and is designed to offer visitors an opportunity to view the refuge wildlife by tram, automobile, bicycle or on foot. Heavy rains erode Wildlife Drive creating potholes and run-off which pollutes and fills adjacent water bodies. The road is graded every three to six months to maintain a drivable surface. This road will be augmented with an environmentally friendly surface material designed to allow water percolation through the material. Funded through TEA-21, the road improvement project is controversial to local residents, who want to maintain the natural surface.

Wildlife Drive is the starting point for several trailheads including Indigo Trail and Shell Mound Trail in addition to providing observation lookouts. The drive is one-way and traffic is limited to 15 miles per hour. During peak season, the sides of the road are frequently crowded with visitors who chose to get out of their cars at designated and non-designated stops. Although traffic at these times may be slow, Wildlife Drive is generally wide enough to accommodate the parked cars without blocking the flow of traffic. A common stop along the drive, The Cross Dike trail (see Figure 5) connects Wildlife Drive to the Indigo (hiking/biking) Trail and is the most congested area on the drive for both cars and pedestrians. Another concern regarding traffic on Wildlife Drive is the frequency of cars on the drive causing wildlife disturbance.

Figure 5. Cross Dike and Shell Mound Trail



The guided tram tours offer the visitor and the refuge an ideal opportunity (see Figure 6). The tram, which is fueled by propane and holds 38 to 40 passengers, operates from the Tarpon Bay Recreation area during peak season and from the Visitor Center during off-peak. The guided tour offers an educational experience in addition to reducing the number of vehicles that enter wildlife habitats. The concessionaire that operates the tram service is limited to three, two-hour tram tours per day during peak season with one tram vehicle. Both the refuge and visitors are pleased with the tram experience. The refuge plans to expand the opportunity for visitors to take the guided tour by increasing the number of trams available. The refuge is preparing to issue a contract for an additional concession specifically for trams or an expansion of the existing tram operation.

Figure 6. Tram Boarding at “Ding” Darling NWR



The lack of roadway capacity on Sanibel Island streets is well known to the residents, employees and long-term visitors to the island. During peak season, traffic queues, extending for several miles, begin to occur near 10 a.m. for vehicles entering the island, and during evening rush hours for vehicles exiting the island. The number of cars leaving the island between 3:00 and 6:00 p.m. in peak season inhibits the flow of traffic to such an extent that residents and employees sometimes commute by bicycle or boat to avoid the gridlock. Another local situation that discourages visitors is the lack of parking at public beaches. The city does not condone the construction of new parking areas, nor does it anticipate expanding the roadways. The latent demand displayed in the traffic congestion patterns and research suggests that regardless of roadway size, congestion on the island roads will remain. In addition to the general lack of capacity and inability to expand local roadways on the island, the island faces a capacity problem on the causeway from the mainland to Sanibel Island. Revenues from the Lee County-owned causeway exceed \$3 million dollars each year.

The bicycle paths on Sanibel Island are well maintained and easily accessible. Residents and long-term visitors sometimes use the bicycle paths as transportation routes, although most bicycle path use is recreational. There is no evidence of disproportionate conflict between auto and bicycle traffic on Sanibel Island. Another active ATS in existence on the Island is the Adventures in Paradise trolley that operates between large resorts and local activities, including the refuge. The trolley will drop off visitors in the parking lot of the refuge, but is not authorized to operate through the refuge. The trolley's effectiveness is limited by the roadway congestion on Sanibel Island. LeeTran, the Lee County transit

provider, has chosen not to serve Sanibel Island due to the inability of buses to keep scheduled routes through the excessive traffic congestion.

A recent study completed on the Lee County barrier island traffic showed that the majority of traffic on Periwinkle Way between the hours of 4:00 p.m. and 6:00 p.m. originated at the beach, a popular destination for all visitors to Sanibel Island, rather than the refuge. While the serious traffic situation of the City of Sanibel exceeds the difficulty faced by the refuge, the problematic island traffic influences the traffic flow to and from the refuge.

3.2 Community Development Conditions, Issues and Concerns

The eco-tourism attractions of the Island bring both residents and visitors. The opening of the Sanibel causeway in 1963 allowed the development of Sanibel Island to expand in ways residents had never seen before. More building permits were issued by Lee County, Florida in one week of 1963, than in the whole year of 1962. The current population of the City of Sanibel is approximately 5,700 permanent residents with a swell of peak season population at nearly 30,000 people. The average age of Sanibel residents is 58 years.

The Island's economic base is rooted in the main tourist attraction: the natural environment. Sanibel Island residents are, in general, conservationists who want to preserve the natural beauty of the Island. Many would like to close the causeway access to the island in order to reduce visitation. In addition, the City development codes could be the strictest in the state. No new hotels or motels have been built on the Island in the last 25 years.

Both the Island Coast Development and the Sanibel and Captiva Islands Chamber of Commerce organizations would like to see the expansion of the tourist season to include the shoulder months of October, November, and May. In fact, the Island Coast Development group is attempting to attract foreign and in-state tourists during the off-season.

3.3 Natural or Cultural Resource Conditions, Issues and Concerns

In the late 1980s and early 1990s, the refuge closed large areas of the refuge to increase the safety of wildlife habitats. Except for special permits to uses such as research, the only land access to the refuge is via Wildlife Drive. In addition, concern for the wildlife and the need for maintenance prompted the refuge to close Wildlife Drive one day per week.

The greatest traffic impact to natural resources of the refuge is the wildlife disturbance caused by vehicular traffic along Wildlife Drive. The number of cars on Wildlife Drive affect the number of times per hour waterfowl may be flushed out of feeding areas, causing distress and damage to the birds. In recent years, the refuge has eliminated the use of mopeds and tour buses on Wildlife Drive. The disturbance of both wildlife and visitors were the reasons given to prohibit those uses.

In an effort to give wildlife a chance to have some quiet time during feeding hours, the refuge has attempted to delay the opening of the drive until one hour after sunrise. While

this effort was accepted in the long-day summer months, it presented a problem during the short-day winter months, which coincide with the peak tourist season. This effort to diminish the effect of visitation on the wildlife resulted in traffic back-ups on Sanibel-Captiva Road, blocking commuter traffic and angering visitors.

The Shell Mound trail is an archeological site of the Calusa Indians, who discarded shellfish remains in mounds on the islands. The trail is accessible by a platform trail made of recycled materials. Signs at the trailhead alert visitors about the prohibition of removing artifacts from the trail area.

3.4 Recreation Conditions, Issues and Concerns

The recreation opportunities on the refuge are limited to the activities along Wildlife Drive, adjacent pedestrian and bicycle trails and canoeing and boating opportunities at Tarpon Bay. Recreation opportunities are a third priority for the refuge, behind wildlife habitat preservation and visitor education. Any recreation activity that is disruptive or detrimental to the conservation of wildlife and habitats is either not permitted or will be discontinued.

■ 4.0 Planning and Coordination

4.1 Unit Plans

The “Ding” Darling NWR is in the beginning stages of the USFWS mandated comprehensive conservation plan. The plan is scheduled to be complete in approximately two years. In addition to the conservation plan, the refuge has plans for expansion outlined in the 1994 Final Environmental Assessment and Land Protection Plan for the Proposed Expansion of J.N. “Ding” Darling NWR.

4.2 Public and Agency Coordination

The refuge is a very active part of public and political life on Sanibel Island. The refuge has over 170 full-time and part-time volunteers that work as information guides on the trails and Wildlife Drive, in the Visitor Center and in the refuge administrative office. The refuge, along with the Sanibel-Captiva Conservation Foundation, is the center of the conservation effort on the Island.

The refuge has cooperative agreements with the City of Sanibel and the Sanibel-Captiva Conservation Foundation to share equipment and personnel for the maintenance and restoration of fish and wildlife habitats on and off the refuge.

The “Ding” Darling Wildlife Society is the not-for-profit friends group for the refuge. Although the activities of the Society are independent of the refuge, they work very

closely with the refuge staff to achieve the goals of the refuge. The Society is responsible for raising the money needed to build the Environmental Education Center, the new Visitor Center of the refuge.

■ 5.0 Assessment of Need and System Options

The refuge is generally in favor of closing Wildlife Drive to auto traffic, but realizes the difficulty it may have with public opinion regarding a needed parking structure, in addition to changing the use of the refuge for residents. Regardless of the decision to institute the use of ATS or not, the decision must be coordinated with the City of Sanibel and the residents of Sanibel Island.

5.1 Magnitude of Need

In a place where natural resources and environmental ambiance are the key attractions and major force in the tourist economy, preserving the environment is the most important mission. There is great opportunity for an ATS to support this mission by providing a way to allow more people to be educated and enjoy the natural surroundings of Sanibel Island, without overcrowding the streets and refuge with cars.

The Island is at a crossroads with the amount of traffic it is able to support, while maintaining or expanding the tourist economy in the context of environmental conservation. The struggle between preserving Sanibel and accommodating the tourist economy has been at the root of Sanibel’s traffic problems for years. It is clear that the problems of the City commingle with the problems of the refuge and that a joint effort will be necessary to assist the refuge and the City in the future.

5.2 Feasible Transit Alternatives

There are two levels at which transportation alternatives on Sanibel Island exist: within the J.N. “Ding” Darling NWR itself, and the connection of the refuge to the rest of the Island. The feasible alternatives below are described for peak season service.

- Within the refuge itself, an expanded alternative fuel tram system on Wildlife Drive could provide the educational experience and a reduction in frequency of wildlife disturbance desired by the refuge. The tram system would allow passengers to board and exit at several points along Wildlife Drive and would run on 20-minute headways. In this scenario, private cars would not be allowed on Wildlife Drive. Bicycles and pedestrians would continue to be allowed on the drive. Ample parking would be provided at the tram boarding area.
- In an effort to allow visitors to Sanibel Island enjoy other attractions on the Island, including the beaches, two feasible alternatives would give visitors the freedom to

leave their cars on the mainland. In any system designed to serve the refuge in addition to other attractions on the island, the system needs to accommodate beach and other recreational equipment that visitors may bring with them. The city-based services need not be free of charge, although a mechanism for encouraging alternative transportation use will be necessary.

- One alternative would be a shuttle system of small buses or trolleys that would run at a minimum of once every half-hour headways from a parking area on the mainland to Sanibel Island, with stops at the refuge and beaches. Special considerations would need to be made for the level of traffic that Sanibel currently experiences to keep the shuttle system from getting caught in that traffic.
- A second alternative would be to bypass the causeway via a ferry system that would originate on the mainland and bring visitors to a public beach on the island. Shuttle service between the landing and attractions, including the refuge, would be needed to complete the service.

■ 6.0 Bibliography

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Nicholas, James C., *Economic Possibilities, Realities and Assumptions*, City of Sanibel, May 1997.

■ 7.0 Persons Interviewed

Kristie Seaman Anders, Education Director, The Sanibel-Captiva Conservation Foundation

Gates Castle, Director of Public Works, City of Sanibel, Florida

Jorge Coppen, Wildlife Biologist, J.N. “Ding” Darling NWR

Lou Hinds, Refuge Manager, J.N. “Ding” Darling NWR

Kerry Kraus, Refuge Ranger, J.N. “Ding” Darling NWR

Bob Mitchell, Naturalist and Guide, J.N. “Ding” Darling NWR/Tarpon Bay Recreation Tram Tour

Bruce Rogers, Planning Director, City of Sanibel, Florida

Edward Sealover, City Manager, City of Sanibel, Florida

Susan Trokey, Land Acquisition Manager, J.N. “Ding” Darling NWR

Keith Trowbridge, Executive Director, Sanibel and Captiva Islands Chamber of Commerce

■ Appendix – City of Sanibel Vision Statement (1996)

After months of public meetings, discussions, and thought, the citizens adopted the following vision statement to be submitted with their comprehensive land use plan (The Sanibel Plan) to the State of Florida:

“Sanibel is and shall remain a barrier island sanctuary, one in which a diverse population lives in harmony with the island’s wildlife and natural habitats. The Sanibel community must be vigilant in the protection and enhancement of its sanctuary characteristics.

The City of Sanibel will resist pressures to accommodate increased development and redevelopment that is inconsistent with the Sanibel Plan, including this Vision Statement.

The City of Sanibel will guard against and, where advisable, oppose human activities in other jurisdictions that might harm the island’s sensitive habitats, including the island’s surrounding aquatic ecosystems.

Sanibel is and shall remain a small town community whose members choose to live in harmony with one another and with nature; creating a human settlement distinguished by its diversity, beauty, uniqueness, character, and stewardship.

- **Diversity** – Sanibel cherishes its cultural, social, ecological, and economic diversity and will endeavor to maintain it.
- **Beauty** – Sanibel will foster quality, harmony and beauty in all forms of human alteration of the environment.
- **Uniqueness** – Sanibel chooses to remain unique through a development pattern which reflects the predominance of natural conditions and characteristics over human intrusions.
- **Character** – Sanibel chooses to preserve its rural character in its setting within an urbanizing county. The commercialization of natural resources will be limited and strictly controlled.

- **Stewardship** – Sanibel affirms a land ethic that recognizes land holding – both public and private – as a form of stewardship, involving responsibilities to the human and natural communities of the island and its surroundings, and to future generations.

The Sanibel community recognizes that its attractiveness to visitors is due to the island’s quality as sanctuary and as community. The City of Sanibel will welcome visitors who are drawn by, and are respectful of, these qualities; it will resist pressures to accommodate visitor attractions and activities that compromise these qualities.”

This three part statement of the community’s vision of its future is a hierarchy; one in which the dominant principle is Sanibel’s sanctuary quality. Sanibel shall be developed as a community only to the extent to which it retains and embraces this quality of sanctuary. Sanibel will serve as attraction only to the extent to which it retains its desired qualities as sanctuary and community.